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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 10/658,850 | 09/10/2003 | Noboru Shibata | 000449.00021 | 4208 |
| 22907 | 7590 | 11/08/2004 | EXAMINER | |
| BANNER & WITCOFF | | | | MAI, SON LUU |
| 1001 G STREET N W | | | | |
| SUITE 1100 | | | | |
| WASHINGTON, DC 20001 | | | | 2818 |
| ART UNIT | | | | |
| PAPER NUMBER | | | | |

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/658,850 | SHIBATA ET AL. | |
| | Examiner | Art Unit | |
| | Son L. Mai | 2818 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09-10-03; 12-09-03 and 12-24-03.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-48 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-48 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/664,546.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12-09-03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The papers filed 09-10-03; 12-09-03 and 12-24-03 have been received.

Accordingly, claims 1-48 are pending.

Reissue Applications

2. The reissue oath/declaration filed with this application is defective because it fails to contain a statement that all errors which are being corrected in the reissue application up to the time of filing of the oath/declaration arose without any deceptive intention on the part of the applicant. See 37 CFR 1.175 and MPEP § 1414.
3. Claims 1-47 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 19-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 19, the recitations “the control voltage generator generates a single reference voltage” (line 7) and “the control voltage generator generates only two reference voltages” (lines 8-9) have no support from the specification.

Claims 20-22 are rejected because in their dependency they include the limitations of rejected base claim 19.

As to claim 23, the recitation “wherein said at least one control circuit reads...for a second set of memory cells” (lines 6-8) has no support from the specification.

Claims 24-27 are rejected because in their dependency they include the limitations of rejected base claim 23.

As to claim 28, the recitation “wherein said at least one control circuit reads...for a second set of memory cells” (lines 6-8) has no support from the specification.

As to claim 29, the recitation “wherein the potential applied to said word line...said second page of data” (lines 7-9) has no support from the specification.

Claims 30-44 are rejected because in their dependency they include the limitations of rejected base claim 29.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 29-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29 recites the limitation "said word line" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claims 30-44 are rejected because in their dependency they include the limitations of rejected base claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 23-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibata et al. (U.S. Patent 6,178,115).

Regarding claims 23 and 28, Shibata et al. discloses a semiconductor memory device comprising at least one memory array with word lines and bit lines, said memory array storing multivalued data in memory cells, said multivalued data including at least a first page, a second page of data and a third page of data (column 7, lines 37-41); a control circuit (7a, 7b in figure 2) reads one of said first page of data and said second page of data for a first set and a second set of memory cells (column 9, lines 35-52).

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Regarding claims 24 and 25, Shibata et al. teaches at column 9, lines 40-47, a first or second page of data is read followed by another first or second page of data.

Regarding claim 26 and 27, Shibata et al. shows in figure 3, data storage circuits (2) and input/output buffer (4) connected as claimed.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Choi (U.S. Patent 5625590), Kawamura (U.S. Patent 6288936), Chen (U.S. Patent 6522580) and Shibata (U.S. Patent 6600676) teach semiconductor memory devices having multivalued memory cells having pages of data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son L. Mai whose telephone number is 571-272-1786. The examiner can normally be reached on 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11-03-04


Son L. Mai
Primary Examiner
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